

AMENDMENTS TO THE CLAIMS

In the Application, please amend the set of claims as hereinafter indicated.

1. (Previously Presented) An imaging coil comprising:
a pair of end rings substantially centered around a common axis and spaced apart along the length of said axis;
a central ring substantially centered around said axis so as to be parallel to and situated between said end rings; and
a plurality of legs coupled between said pair of end rings and said central ring;
wherein each of said end rings has a radius that is greater than the radius of said central ring, and said central ring is adapted for being coupled to a ground reference during operation of said imaging coil.
2. (Previously Presented) An imaging coil as in claim 1, wherein at least one of said end rings is elevated.
3. (Currently Amended) An imaging coil as in claim 1, wherein each radius of said end rings is ~~approximately~~ at least 1.0cm greater in length than said radius of said central ring.
4. (Currently Amended) An imaging coil as in claim 1, wherein each radius of said end rings is ~~approximately 31.5cm~~ within a range defined from 30.5cm and to 32.5cm.
5. (Currently Amended) An imaging coil as in claim 1, wherein said radius of said central ring is ~~approximately 30.5cm~~ less than 31.5cm.
6. (Previously Presented) An imaging coil as in claim 1, wherein said plurality of legs includes more than 16 legs.

7. (Currently Amended) An imaging coil as in claim 1, said imaging coil further comprising a plurality of capacitor groupings coupled along said pair of end rings, wherein each of said capacitor groupings includes a plurality of capacitors with a group coverage area having a width that is ~~approximately~~ greater than 5.0cm.

8. (Previously Presented) An imaging coil as in claim 1, wherein said central ring has a low impedance such that said central ring is effectively shorted to said ground reference when coupled to said ground reference during operation of said imaging coil.

9. (Currently Amended) An imaging coil as in claim 1, wherein said pair of end rings, said central ring, and said plurality of legs are configured so as to form a ~~birdcage-style~~ birdcage-style imaging coil.

10. (Currently Amended) An imaging coil comprising:
a pair of end rings substantially centered around a common axis and spaced apart along the length of said axis;

at least one central ring substantially centered around said axis so as to be parallel to and situated between said end rings; and

a plurality of legs coupled between said pair of end rings and said at least one central ring;

wherein said plurality of legs includes (i) a first series of legs coupled between one of said end rings and said at least one central ring[[,]] and (ii) a second series of legs coupled between the other one of said end rings and said at least one central ring; and

wherein each of said end rings respectively has a radius that is greater than each respective radius of said at least one central ring, and at least one said central ring is adapted for being coupled to a ground reference during operation of said imaging coil.

11. (Currently Amended) An imaging coil as in claim 10, wherein said pair of end rings, said at least one central ring, and said plurality of legs are configured so as to form a ~~birdcage-style~~ birdcage-style imaging coil.

12. (Previously Presented) An imaging coil comprising:
a first plurality of end rings substantially centered around a common axis and situated along the length of said axis;
a second plurality of end rings substantially centered around said axis and situated along the length of said axis so as to be spaced apart from said first plurality of end rings;
at least one central ring substantially centered around said axis so as to be parallel to and situated between said first and second plurality of end rings; and
a plurality of legs coupled between said first and second plurality of end rings and said at least one central ring;
wherein each of said first and second plurality of end rings respectively has a radius that is greater than each respective radius of said at least one central ring, and at least one said central ring is adapted for being coupled to a ground reference during operation of said imaging coil.

13. (Currently Amended) An imaging coil as in claim 12, wherein said first and second plurality of end rings, said at least one central ring, and said plurality of legs are configured so as to form a ~~birdcage-style~~ birdcage-style imaging coil.

14. (Previously Presented) An imaging coil comprising:
a plurality of end rings;
at least one central ring situated both parallel to and between said plurality of end rings with at least one said central ring adapted for being coupled to a ground reference and having a low impedance so that said central ring is effectively shorted to said ground reference when coupled to said ground reference; and

a plurality of legs coupled between said plurality of end rings and said at least one central ring.

15. (Currently Amended) An imaging coil as in claim 14, wherein said plurality of end rings, said at least one central ring, and said plurality of legs are configured so as to form a ~~birdcage-style~~ birdcage-style imaging coil.

16. (Previously Presented) An imaging coil as in claim 14, wherein said at least one central ring includes a plurality of capacitors having low impedance.

17. (Currently Amended) An imaging coil as in claim 16, wherein said plurality of capacitors have low impedance at frequency levels of ~~approximately greater than or equal to~~ at least 120MHz.

18. (Previously Presented) An imaging coil as in claim 14, wherein said plurality of end rings are adapted for being driven via a plurality of balun-less drive cables.

19. (Currently Amended) A magnetic resonance imaging (MRI) system having a patient bore, said MRI system comprising:

a radio frequency (RF) shield; and

an imaging coil at least partially surrounded by said RF shield and including:

(i) a pair of end rings substantially centered around a common axis and spaced apart along the length of said axis;

(ii) a central ring substantially centered around said axis so as to be parallel to and situated between said pair of end rings, said central ring having a plurality of capacitors and a plurality of connections therebetween; and

(iii) a plurality of legs coupled between said pair of end rings and said central ring;

wherein each of said end rings has a radius that is greater than the radius of said central ring, and said central ring is adapted for being coupled to a ground reference during operation of said MRI system.

20. (Previously Presented) An MRI system as in claim 19, said MRI system further comprising a driver coupled to said pair of end rings via balun-less drive cables.

21. (Previously Presented) An MRI system as in claim 19, wherein said end rings are closer to said RF shield than said central ring.

22. (Previously Presented) An MRI system as in claim 19, wherein said end rings are farther away from the patient bore of said MRI system than said central ring.

23. (Previously Presented) An MRI system as in claim 19, wherein said plurality of legs includes more than 16 legs.

24. (Previously Presented) An MRI system as in claim 19, said MRI system further comprising a plurality of capacitor groupings coupled along said pair of end rings, wherein each of said capacitor groupings includes a plurality of capacitors with a group coverage area having a width that is greater than 5.0cm.

25. (Previously Presented) An MRI system as in claim 19, wherein said central ring has a low impedance so that said central ring is effectively shorted to said ground reference when coupled to said ground reference during operation of said MRI system.

26. (Previously Presented) An imaging coil as in claim 7, wherein said plurality of capacitors is spread out along said axis so as to form said group coverage area.

baluns or balun-based cables for driving an imaging coil. (Reisker, see discussion of "drive points" being at "virtual ground" in column 7, lines 29-41; and see also "baluns" included in drive cables as depicted in Figure 1A). (Petropoulos, see discussion of "baluns" in column 3, lines 7-26; and see also "baluns" used for driving an imaging coil in Figure 5). Furthermore, none of the other references cited by Examiner teach or suggest Applicants' presently claimed "imaging coil," which includes a "central ring" that is "adapted for being coupled to a ground reference" during operation of the imaging coil.

In view of the above, Applicants respectfully request that Examiner's rejections of the claims under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the claims as amended and also the foregoing remarks, Applicants respectfully submit that claims 1-26 are all novel and non-obvious with respect to the prior art of record. Therefore, Applicants respectfully request that all of Examiner's rejections in the Office Action be withdrawn and that a Notice of Allowance be issued for all claims 1-26.

Also, together with this Amendment, a "Petition for an Extension of Time" (2 months) along with appropriate fee is being submitted. Receipt and entry thereof by Examiner is respectfully requested by Applicants.